

Meeting Minutes
May 4, 2006

Montana Board of Research and Commercialization Technology
Board Meeting
301 South Park, Helena, Montana
May 4, 2006

Board Members Attending:

John Youngberg, Chairman
Marty Connell
Jim Davison
Mike Dolson
Larry Hall
Paul Tuss

Others Attending:

Dave Desch, Executive Director
Jane Todd, Program Specialist
Tony Priete, Director of Dept. of Commerce (9:45 – 9:50 am, 12:30 – 12:35pm)
Andy Poole, Deputy Director of Dept. of Commerce (11:05 – 11:10 am)

I. Call to Order

Chairman John Youngberg called the meeting to order at 9:45 a.m.

II. Approval of Minutes

Chairman Youngberg asked for comments regarding the Minutes of the March 16, 2006, Board meeting. There were no comments and Marty Connell moved to approve the Minutes. Seconded by Jim Davison, the Minutes were approved as presented.

III. Review and discussion of proposals submitted March 1, 2006

A discussion was held regarding the large number of applications and how this might influence the review process. After some discussion, it was decided to put the following projects on hold:

#07-04 Montana Infrastructure via Science and Technology Enhanced Partnerships –
INSTEP (NSF EPSCoR)

Johnnie Moore - University of Montana/Montana State University - Missoula/Bozeman
\$1,500,000

Action: Marty Connell moved to set this project aside pending additional information regarding the first two years of the project. Larry Hall and Mike Dolson seconded the motion. With all in favor, the motion carried.

The Board requested a presentation.

#07-05 Integrated Systems for Monitoring Neural Activity in the Mammalian Brain

Charles Gray - Montana State University - Bozeman
\$127,959

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#07-33 Improving Wheat and Barley for Ethanol Production

Mike Giroux - Montana State University - Bozeman

Year 1 - \$117,000; Year 2 - \$117,000; Total - \$234,000

#07-34 Utility of DNA Aptamers Compared to Antibodies in Rapid Field Tests for Tularemia

Brenda Spangler - SensoPath Technologies - Bozeman

Year 1 - \$303,600, Year 1; Year 2 - \$91, 800; Total - \$395,400

#07-42 Information Technology Planning for Health Knowledge Assessment

Russ Lord, - Montana State University Billings - Billings

\$186,212

#07-43 Rabbit Cytokine Reagents for Pharmaceutical Development

William Tino - LigoCyte Pharmaceuticals, Inc. - Bozeman

\$250,205

#07-44 Novel Material and Technique for Removing Toxic Metals

Kumar Ganesan - Montana Tech - Butte

\$67,344

#07-46 Structured Nanomaterials Deposition Layers

Yuval Avniel - Briqx Technologies, Inc. - Missoula

\$79,900

#07-48 Block Trading Model Research

Lester Dye, - Benchmarks Simulation - Missoula

\$80,000

#07-50 Research and Development of Microbion Corporation Technologies with Strong Commercial Potential

Brett Baker - Microbion Corporation - Bozeman

\$300,000

#07-52 Genomic Technologies from the Flathead Valley

Thomas Brown - GeneCTAr.com - Whitefish

Year 1 - \$50,000; Year 2 - \$50,000; Total - \$100,000

The Board discussed the following proposals in detail:

#07-01 Geothermal Development Project

Jed Thomas - Sage Resources - Missoula

\$150,000

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Discussion Notes

The Board liked this project because:

- Good proposal
- Near-term commercialization
- Importance of geothermal issue

The Board expressed concerns as follows:

- Questions regarding match

#07-02 Design, Modification and Characterization of Phthalocyanines for Ultra-Fast 3D Optical Memory

Charles Spangler – MPA Technologies, Inc. – Bozeman

Year 1 - \$195,000; Year 2 - \$197,500; Total - \$392,500

Discussion Notes

The Board liked this project because:

- Important project
- Top-notch science
- NSF funding

The Board expressed concerns as follows:

- Large amount of request
- Long-term commercialization

#07-03 Immobilized Metal Polyamine Composites (IMPACS) for Removal and Recovery of Negatively Charged Species from Contaminated Waters and Mine Leaches

Edward Rosenberg – University of Montana – Missoula

Year 1 - \$112,398; Year 2 - \$105,061; Total - \$217,459

Discussion Notes

The Board liked this project because:

- Near-term commercialization
- Dealing with environmental issues
- Sound science
- Success of previous projects
- Company plans to stay in Montana

The Board expressed no particular concerns.

#07-06 Evaluation of Oilseed Crops for Biodiesel Production and Quality in Montana

Jerry Bergman, Montana State University – Bozeman/Sidney

\$75,000

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The Board liked this project because:

- Biodiesel project
- Not a huge monetary request
- Principal Investigator's reputation as foremost safflower breeder in the United States
- Oil prices make it doable in Montana
- Existing oil crush facility at Culbertson
- Significant that research is in public domain

The Board did not express any particular concerns.

#07-07 Screen and Select Lentil Varieties with Suitable Agronomic Traits for No-till Production Systems in Montana

Chengci Chen – Montana State University – Bozeman/Moccasin

Year 1 - \$25,310; Year 2 - \$25,310; Total - \$50,620

Discussion Notes

The Board expressed no particular interest in this project.

The Board expressed concerns as follows:

- Nothing new or novel, not particularly cutting-edge
- Function that should currently be going on at experiment stations

#07-08 NeuroSys Innovative Computer Software for Rapid Database Generation

Gwen Jacobs – Montana State University – Bozeman

Year 1 - \$200,000; Year 2 - \$200,000; Total - \$400,000

Discussion Notes

The Board liked this project because:

- Revolutionary, proprietary nature of the database
- Potential to move to higher level of database management
- Principal Investigator has good reputation on campus.

The Board expressed concerns as follows:

- Why NIH is supporting video productions in Bozeman

The Board requested a presentation.

#07-09 The Development of Novel Human Waste Treatment Products Utilizing Endophytic Microorganisms

Gary Strobel – Montana State University – Bozeman

Year 1 - \$167,000; Year 2 - \$163,000; Total - \$330,000

Discussion Notes

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The Board liked this project because:

- Commercialization success of previous projects
- Fairly low risk
- Short-term commercialization
- Impressive operation
- Success story between research, private company, university system, local Montana community

The Board expressed concerns as follows:

- Board has funded the project twice in the past.

#07-10 Commercialization of *Bacillus pumilus strain 16-5* as a Biological Seed Treatment

Barry Jacobsen – Montana State University – Bozeman

\$86,500

Discussion Notes

The Board liked this project because:

- Medium risk
- Short time to commercialization
- Product has been licensed.
- Principal Investigator's reputation as a researcher
- Licensed to Montana Microbial Products, Missoula

The Board expressed concerns as follows:

- Initial production facility appears to be in Wyoming
- House Joint Resolution No. 33 urges state agencies to assist the state's sugar industry.

#07-11 Smart Adaptive Antennas for Wireless Communications in Rural and Sparsely Populated Areas

Yikun Huang - Montana State University – Bozeman

Year 1 - \$99,805; Year 2 - \$99,626; Total - \$199,431

Discussion Notes

The Board liked this project because:

- Low risk
- Potential to commercialize in rural market
- Weaknesses identified in peer reviews corrected

The Board expressed no particular concerns.

#07-12 Value-Added Small Grains for Ethanol Production in Montana

Joyce Eckhoff – Montana State University – Bozeman/Sidney

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\$100,000

Discussion Notes

The Board expressed no particular interest in this project.

The Board expressed concerns as follows:

- Problems with ethanol production from small grains
- Competition from corn

#07-13 Development, Engineering and Field Testing of a Device to Facilitate Venous Access for Medical Procedures

Toni Harris – InfraMed Imaging – Bozeman

\$200,000

Discussion Notes

The Board expressed interest as follows:

- Increase competency at lower level of medical staff
- Addresses difficulty finding veins in an increasingly older population
- Low risk
- Short-term to commercialize

The Board expressed concerns as follows:

- Not convinced this is a problem that would require the purchase of additional equipment to solve

#07-14 Development of Intellectual Property: Viral Mediated Gene Delivery to Improve the Functional Quality of Cochlear Implants

David Poulsen – Big Sky Biotechnology/Montana Neuroscience Institute – Missoula

Year 1 - \$191,814; Year 2 - \$191,814; Total - \$383,628

Discussion Notes

The Board expressed interest as follows:

- Proof of concept study
- Virus is patented.
- High impact potential
- Technology stems from NIH grant
- Project location at UM in Missoula
- Great example of successful technology transfer process

The Board expressed concerns as follows:

- Large funding request
- High risk

#07-15 New Biosensors for Drug Development and Testing

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Anne Marie Quinn – Montana Molecular – Bozeman
Year 1 - \$115,200; Year 2 - \$115,200; Total - \$230,400

Discussion Notes

The Board expressed no particular interest in this project.

The Board expressed concerns as follows:

- Worried about the technology
- Long-term to commercialization

#07-16 Innovative Drug Discovery Engine to Generate Lead Compounds
Gregory Gillispie – Fluorescence Innovations, Inc. – Bozeman
\$200,000

Discussion Notes

The Board expressed interest as follows:

- Significance of Letter of Support from TechLink
- Company relocation from Fargo, ND to Bozeman
- Access to National Cancer Institute's entire compound library
- Receipt of 33 SBIR awards
- Revolutionary technology

The Board expressed concerns as follows:

- Want to know more about the technology

The Board requested a presentation.

#07-17 New Red Laser-Excited Fluorescent Dyes for Ultrasensitive Multiplex Detection
in Proteomics and Diagnostics
Edward Dratz – Montana State University – Bozeman
\$150,000

Discussion Notes

The Board expressed interest as follows:

- Low risk
- Successful current project
- High potential
- Near term to commercialization

The Board expressed concerns as follows:

- Staff indicates some reporting problems

The Board requested Dave Desch to determine status of current project.

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#07-18 Delivering the Future of Medicine
Brian Campion – SpeciGen – Palo Alto, CA
\$200,000

Discussion Notes

The Board expressed interest as follows:

- Initial research funded by Board
- Principal Investigator world renown virologist
- Medicine of the future
- Leading edge nanotechnology
- Could put Montana on the map for nanotechnology
- Substantial amount of federal funds already received

The Board expressed concerns as follows:

- High risk
- Long term to commercialize
- Financial status of company
- Likelihood of staying in Montana

The Board requested a presentation.

#07-19 Analgesic Coating for Cardiothoracic Wound Drain Device
Benjamin Luchsinger – Bacterin International – Belgrade
\$150,834

Discussion Notes

The Board expressed interest as follows:

- Company has history of bringing related medical devices to the market.

The Board expressed concerns as follows:

- Should Board finance evolution of company to advance its product lines?

#07-20 Polymer Microstructures for Opto-electronic Devices
Yves Idzerda – Montana State University – Bozeman
Year 1 - \$96,800; Year 2 - \$52,750; Total - \$149,550

Discussion Notes

The Board expressed interest as follows:

- Technology is interesting.

The Board expressed concerns as follows:

- Why isn't industry investing in this technology?
- Funding of a "process"
- Medium commercialization potential

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#07-21 Product Performance as the Key to Successful Commercialization of Gluten-Free Products for Amazing Grains Cooperative

Tim Anderson – Mission Mountain food Enterprise Center – Ronan

Year 1 - \$109,502; Year 2 - \$93,521; Total - \$203,023

Discussion Notes

The Board expressed interest as follows:

- Alternative agricultural crop
- Commercial value of gluten-free product

The Board expressed concerns as follows:

- Ratio of research left to do in proportion to marketing
- Questions about the demand for gluten-free products

#07-22 Implementation of Quantum Computing in Rare-Earth Ion Doped Crystals

Mingzhen Tian – Montana State University – Bozeman

\$99,624

Discussion Notes

The Board expressed interest as follows:

- Medium risk
- High potential
- Fast computing without heat
- Great project, great science
- Synergy in MSU Optics Department
- Leveraging existing strengths in university system and Montana laser companies

The Board expressed concerns as follows:

- Long-term to commercialize
- Where are additional dollars coming from?

#07-23 Commercialization of Technologies Developed at the University of Montana

Michael Kavanaugh – Transynaptic Technologies/University of Montana – Missoula

\$81,000

Discussion Notes

The Board expressed interest as follows:

- NIH support
- Commitment for manufacturing center
- Movement from basic to applied research

The Board expressed concerns as follows:

- Weak on commercialization timeframe and process

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#07-24 Demineralized Bone Matrix Putty for Transplantation

Gregory Juda – Bacterin International – Belgrade

\$165,974

Discussion Notes

The Board expressed interest as follows:

- High potential in terms of commercialization
- Medium risk
- Potential to revolutionize the bone transplant industry

The Board expressed no particular concerns.

The Board requested a presentation.

#07-25 Antimicrobial Coating on Wound Drains

Todd Meyer – Bacterin International – Belgrade

Discussion Notes

The Board expressed interest as follows:

- High potential in terms of commercialization
- Medium risk

The Board expressed concerns as follows:

- Not convinced the technology is new or novel

#07-26 Radiosondes for Cloud Water Content Measurements and Educational Applications

John Bognar – Anasphere, Inc. – Bozeman

\$64,314

Discussion Notes

The Board expressed interest as follows:

- Low risk
- Medium-to-high potential
- Near term to commercialization
- Numerous potential applications
- Existing product in unmanned aerial vehicles

The Board expressed concerns as follows:

- Does market exist and, if so, how big?
- Poor job of defining market
- Who will buy it?

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#07-27 High-Performance Biobased Motor Oils from Vegetable Oil Estolides

Tony Kavanagh – Peaks and Prairies – Bigfork/Malta

Year 1 - \$85,000; Year 2 - \$85,000; total - \$170,000

Discussion Notes

The Board expressed interest as follows:

- Proposal not well written
- Near term to commercialization
- Crushing facility at Malta
- Group of Hi-Line wheat farmers
- DoE funding
- Biobased motor oils

The Board expressed concerns as follows:

- Use of grant money for trade shows may not be allowed.

#07-28 Research Support for the Development and Manufacturing of a Rapid Biofilm Analysis Test Kit

Discussion Notes

The Board expressed interest as follows:

- Medium-to-low risk
- Medium potential
- Good technology
- Support biofilm industry in Montana
- Good analysis of competition, niche
- Good example of tech transfer from university to producing product through private company
- Builds on previously funded, successful projects

The Board expressed concerns as follows:

- Natural evolution of product lines that company should be funding?

#07-29 Tactical Automation, Assessment, and Performance Support System

Denbigh Starkey – Montana State University – Bozeman

Year 1 - \$11,832; Year 2 - \$112,303; Total - \$224,135

Discussion Notes

The Board expressed interest as follows:

- Potential cutting-edge science

The Board expressed concerns as follows:

- Would like to know more about Advanced Acoustics Concepts

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#07-30 New Oilseed Cultivars for Novel Vegetable Oil Types

Chaofu Lu – Montana State University – Bozeman

Year 1 - \$77,500; Year 2 - \$97,176; Total - \$174,676

Discussion Notes

The Board expressed interest as follows:

- Not large request
- Essential to do basic research in order to grow products for biodiesel

The Board expressed concerns as follows:

- Long-term to commercialize

#07-31 A Novel, Non-Herbicidal, Method for Knapweed Control

Giles Thelen – Native Yards, Inc. – Missoula

\$56,999

Discussion Notes

The Board expressed interest as follows:

- Not large monetary request

The Board expressed concerns as follows:

- Application of activated charcoal to large areas sounds impractical.

#07-32 Acoustical Sensors: Detection and Surveillance Research

Robert Maher – Montana State University – Bozeman

\$72,120

Larry Hall recused himself on this project due to potential conflict of interest.

Discussion Notes

The Board expressed interest as follows:

- Interesting, high-risk technology
- Many potential applications

The Board expressed concerns as follows:

- Military partnership would seem logical, but is not described in proposal.

#07-35 CHRYSATOS Imaging System

Lawrence Lass – AquilaVision – Missoula

\$115,000

Larry Hall recused himself on this project due to potential conflict of interest.

Discussion Notes

The Board expressed interest as follows:

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- Fairly low risk
- Ramp up of basic technology
- Impressive cadre of partners
- Montana markets that can use the technology identified
- Push down price, increase commercial availability

The Board expressed concerns as follows:

- Not clear what new science is
- Ownership of data not clear
- Should industry finance building prototype?
- Can the market sustain itself?
- Negative impact at Commerce when application was dropped off
- Technology may interfere with “right to privacy”.

#07-36 Precision Absorbance Colorimetric Sensors Systems (PACSS)

Michael DeGrandpre – Sunburst Sensors - Missoula

Year 1 - \$63,470; Year 2 - \$62,040; Total - \$125,510

Discussion Notes

The Board expressed interest as follows:

- Medium-to-low risk
- Commercialization potential good
- Near term to commercialize

The Board expressed concerns as follows:

- Building device in Seattle, not Montana
- Limited market
- Principal Investigator’s negative rapport with Board

#07-37 Metal Displacement Chromatography Columns for Purification of Cobalt and Copper Ions

Richard Hammen – ChelaTech, Inc. – Missoula

\$200,000

Discussion Notes

The Board expressed interest as follows:

- “Plug and play” recovery application is impressive
- Medium-to-high risk

The Board expressed concerns as follows:

- Request for Proposal format not followed
- Work being done in Nevada
- Source of matching funds unclear

#07-38 Rapid Manufacturing of Titanium Components

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Corby Anderson – CAMP/Montana Tech – Butte
\$109,963

Discussion Notes

The Board expressed interest as follows:

- Match impressive

The Board expressed concerns as follows:

- Is making a documentary a research project?
- No commercialization plan

#07-39 Computer-Based Intelligent Measurement and Control Technologies

Jeff LeFever – MSE Technology Applications Inc. – Butte

\$200,000

Larry Hall recused himself on this project due to potential conflict of interest.

Discussion Notes

The Board expressed interest as follows:

- Medium risk

The Board expressed concerns as follows:

- Unclear how research is to be carried out
- More data gathering than research
- With \$8 million grant, do they need the Board's money?
- This kind of research cannot succeed without changing basic legislation and regulations.

#07-40 Heat Exchanger Fabrication Technology Development

Gloyd Simmons – MSE Technology Applications Inc. – Butte

\$167,880

Note: Larry Hall and Paul Tuss are Board members for MADA, which is providing some in-kind match for this project.

Discussion Notes

The Board expressed interest as follows:

- Exciting science
- Definite need for research
- Potential to make substantial difference in the aerospace industry in Montana

The Board expressed concerns as follows:

- Advanced research
- Benefits 50% of payroll budget
- Relationship between MSE and MADA

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#07-41 Enhancement of Applied/Translational Research in Biomedicine

Richard Bridges – University of Montana/COBRE – Missoula

Year 1 - \$229,839; Year 2 - \$229,852; Total - \$459,691

Discussion Notes

The Board expressed interest as follows:

- Important to consider commercialization aspect and help move the technologies to market
- Project at University of Montana
- Significant success of previously funded projects
- Significant economic development effort for Missoula community
- Principal Investigator is successful at both growing research infrastructure and the transfer of technology to spin-off companies.

The Board expressed concerns as follows:

- Large monetary request

#07-45 Next Generation Dynamometer Project

William Kirkpatrick – Dobeck Performance – Belgrade

\$167,800

Discussion Notes

The Board expressed interest as follows:

- Principal Investigator proven expert at this technology
- New technique
- New patent

The Board expressed concerns as follows:

- Will company be any more successful with MBRCT funding than without it?

#07-47 A Web Service for Delivering Near-Real Time Fire and Fire Hazard Information

Robert Crabtree – Yellowstone Ecological Research Center – Bozeman

Year 1 - \$113,672; Year 2 - \$114,272; Total - \$227,944

Discussion Notes

The Board expressed interest as follows:

- Medium risk
- Near term to commercialize

The Board expressed concerns as follows:

- Remote sensing research and programming are done.
- Large monetary request
- Questionable market size

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#07-49 Research and Development of a Medical Device for the Assessment of Muscle Health

Charles Leonard – University of Montana - Missoula

Year 1 - \$154,448; Year 2 - \$76,319; Total - \$230,767

Discussion Notes

The Board expressed interest as follows:

- Low-risk
- Near term to commercialize

The Board expressed concerns as follows:

- Reengineering of existing software and hardware
- Problems with electronics in space vehicle

#07-51 Development of a Novel Nanoparticle Vaccine Adjuvant

Jon Nagy – NanoMed Technologies, Bozeman

Year 1 - \$137,000; Year 2 - \$137,000; Total - \$274,000

Discussion Notes

The Board expressed interest as follows:

- Potentially a revolutionary project

The Board expressed concerns as follows:

- Where will matching funds come from?

The Board requested a presentation

IV. Public Comment

There was no public comment.

V. Next Meeting

The next meeting will be held on May 24th at 502 South 19th in Bozeman for the purpose of hearing presentations of proposals submitted March 1st.

VI. Adjournment

The meeting adjourned at 5:35 p.m.

John Youngberg, Chairman